UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,909	03/31/2004	Ronald W. Korzun	136483-1	2908

23413 7590 07/10/2006

CANTOR COLBURN, LLP
55 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

EXAMINER	
EDGAR, RICHARD A	

ART UNIT	PAPER NUMBER
3745	

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/708,909	KORZUN ET AL.	
	Examiner	Art Unit	
	Richard Edgar	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *an amendment filed 27 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

Applicant's arguments filed 27 June 2006 have been fully considered but they are not persuasive.

Applicant has amended the claims to include the nozzle preamble as limiting subject matter. Such a limitations is not patentable in view of a newly cited reference (US Patent No. 5,215,432).

Previously objected to claim 14 has been withdrawn and hereby rejected in view of a newly found reference (US Patent No. 2,277,484).

Claim Objections

Claim 18 is objected to because of the following informalities:

In claim 18, the second "the" should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 3,702,221 (Ortolano hereinafter) in view of United States Patent No. 5,215,432 (Pickering et al. hereinafter).

Ortolano shows a group of airfoil blades for a turbine component comprising: multiple blades 36; multiple cover portions 38a, 38b defining a first surface configured to span tips of multiple adjacent blades between tip locations of adjacent blades (see FIG. 7) thereby to form the cover portions for adjacent blades and wherein the cover portions associated with each respective adjacent blade includes facing sides for adjacent cover portions of adjacent blades; and an over cover 34a, 34b coupled to a second surface opposite the first surface of the respective cover portions, the overcover capable of sealing the combustion gas flowpath and damping vibrations (see col. 1, lines 34-35).

The cover portions 38a, 38b include a tenon 39 extending therefrom and through an aperture in the overcover 34a, 34b.

The tenon is peened, or riveted, with respect to the overcover 34a, 34b (col. 4, line 42).

Ortolano only shows a rotor and associated rotor blades, and not an integrally covered nozzle and associated nozzle blades.

Pickering et al. teach that stator blades 12 which are serially arranged in stages with rotor blades, experience vibration forces leading to stress and fatigue failure of the vanes (see at least col. 1, lines 31-35).

Since Ortolano teach to reduce vibrations in turbomachinery rotor blades, and Pickering et al. teach that stator blades are exposed to the same vibratory forces as the rotor blades, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to apply the Ortolano teachings to a nozzle having an inner platform 14, as taught by Pickering et al. for the purpose of reducing the vibration forces experienced by the stator blades.

Claims 1-4, 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,238,368 (Ortolano '368 hereinafter) in view of U.S. Patent No. 2,315,641 (Mosser hereinafter) and further in view of United States Patent No. 5,215,432 (Pickering et al. hereinafter).

Ortolano '368 teaches a multiple group of blades comprising: multiple blades foils 12; multiple respective cover portions 17 defining a first surface 23 configured to span tips of multiple adjacent blades between tip locations of adjacent blades thereby to form the cover portions for adjacent blades and wherein the cover portions associated with each respective adjacent blade include facing sides 18 for adjacent cover portions of adjacent blades. Each multiple respective cover portion includes a tenon 13 extending therefrom in the overcover. The tenon 13 is peened by riveting (col. 2, line 43). The blades further comprise a material buildup 19 on at least one facing side 18 of the cover portions, the material buildup having been machined to develop an interface between adjacent cover portions of adjacent blades (see col. 2, lines 58-65). The material buildup is applied by a selectively mechanical or metallurgical action on both facing sides of the cover portion (col. 2, lines 59-61). The material buildup 19 is applied between cover portions 17 on all adjacent blades thereby to effect integral covered blading (col. 2, lines 5-6). The blades include a selectively applied underweld or underbraze 27 between a cover portion 17 and a blade tip thereby to effectively secure the cover portion to the blade (see col. 3, lines 33-34). The blades in the rotor are replaced in the rotor after the interface has been machined (see col. 4, lines 8-11).

Buildup 20 on the circumferential outerface of the cover and circumferential innerface of the cover is machined (see col. 2, lines 62-68).

Ortolano '368 does not disclose an overcover coupled to a second surface opposite the first surface of the respective cover portion.

Mosser shows turbine blading with cover portions 15, whereby an overcover 16, having a thickness less than the cover portions 15 is provided for the purpose of connecting the blades 10 in groups. Since Ortolano '368 teaches to integrate turbine blading and Mosser teaches that an overcover 16 should be used to integrate turbine blading, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the Ortolano '368 turbine blading arrangement so that an overcover as taught by Mosser is applied to the rivets 13, for the purpose of integrating the turbine blading, thereby minimizing vibratory stresses.

Further, although Ortolano '368 and Mosser are directed to turbine blades and not stator blades, Pickering et al. teach that stator blades 12 which are serially arranged in stages with rotor blades, experience vibration forces leading to stress and fatigue failure of the vanes (see at least col. 1, lines 31-35).

Since Ortolano '368 teach to reduce vibrations in turbomachinery rotor blades, and Pickering et al. teach that stator blades are exposed to the same vibratory forces as the rotor blades, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to apply the Ortolano '368 teachings to a nozzle having an inner platform 14, as taught by Pickering et al. for the purpose of reducing the vibration forces experienced by the stator blades.

Claims 5, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 3,702,221 (Ortolano hereinafter) in view of United States Patent No. 5,215,432 (Pickering et al. hereinafter) as applied to claims 1 and 10 above, and further in view of United States Patent No. 2,277,484 (Flanders hereinafter).

Ortolano in view of Pickering et al. as discussed above, teach a nozzle having an overcover attached through peened tenons, and therefore not welded.

Flanders, however, teach that welding 28 (FIG. 4) as opposed to peening a tenon (FIGS. 1-2) is used for the purpose of fastening a shroud to the blade tips (sentence bridging pages 1 and 2). Further, welding 29 is also used to fix the shroud 30 to the blade tip (FIG. 7, page 2, lines 3-6)

Since Ortolano in view of Pickering et al. show a tenon deformed to fix outer shrouds to airfoil tips, and Flanders teaches to weld 29 the blade shroud as opposed to peening a tenon, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to weld the overcover to the shroud, as opposed to a using a tenon, as taught by Flanders, for the purpose of fixing the overcover without having a projection extending from the overcover.

Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 3,702,221 (Ortolano '221 hereinafter) in view of United States Patent No. 5,215,432 (Pickering et al. hereinafter) as applied to claims 1 and 10 above, and further in view of U.S. Patent No. 2,315,641 (Mosser hereinafter).

Ortolano '221 shows an overcover 34a, 34b which appears to be the same thickness as the cover portions 38a, 38b.

Mosser teaches an overcover 16 being thinner than the shroud 15 for the purpose of decreasing the weight of the rotor.

Since Ortolano '221 is a turbine rotor with two cover portions, and Mosser teaches to make the outer cover portion thinner than the inner cover to reduce the turbine rotor weight, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the overcover 34a, 34b thicknesses thinner than the cover portions 38a, 38b for the purpose of decreasing the weight of the rotor.

Claims 6, 7,8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 3,702,221 (Ortolano '221 hereinafter) in view of United States Patent No. 5,215,432 (Pickering et al. hereinafter) in view of United States Patent No. 2,277,484 (Flanders hereinafter) and further in view of United States Patent No. 5,238,368 (Ortolano '368 hereinafter).

Ortolano '221 in view of Pickering et al. as discussed with respect to claims 1-3, 5 above teach adjacent cover portions, but not a material buildup therebetween.

Ortolano '368 teaches in col. 2, lines 58-62 a material buildup between facing sides 18 of the cover portions for the purpose of integrating the cover portions. The blades are removed, weld built, and reassembled (see col. 4, lines 8-12). The weld buildup extends to the outer circumferential face 22 of the band 17 and the inner circumferential face 23 of the band 17 (see col. 2, lines 65-68). Since Ortolano '221 shows adjacent cover segments, and Ortolano '368 teaches to use a material buildup between adjacent cover segments, it would have been obvious at the time the invention

was made to a person having ordinary skill in the art to use a material buildup between adjacent Ortolano '221 cover segments as taught by Ortolano '368 for the purpose of integrating the cover portions.

Regarding claim 9, Ortolano '368 shows an underweld or underbraze 27 in Fig. 3 for the purpose of strengthening the contact between the blade and the cover portion.

Since Ortolano '221 shows a joint between the blade and the cover portion, and Ortolano '368 teaches strengthening the joint between the blade and the cover portion, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the Ortolano '221 reference with an underweld or underbraze as taught by Ortolano '368 for the purpose of strengthening the contact between the blade and the cover portion.

Claims 15, 16, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 3,702,221 (Ortolano '221 hereinafter) in view of United States Patent No. 5,215,432 (Pickering et al. hereinafter) and further in view of United States Patent No. 5,238,368 (Ortolano '368 hereinafter).

Ortolano '221 in view of Pickering et al. as discussed with respect to claims 10-12 above teach adjacent cover portions, but not a material buildup therebetween.

Ortolano '368 teaches in col. 2, lines 58-62 a material buildup between facing sides 18 of the cover portions for the purpose of integrating the cover portions. The blades are removed, weld built, and reassembled (see col. 4, lines 8-12). The weld buildup extends to the outer circumferential face 22 of the band 17 and the inner circumferential face 23 of the band 17 (see col. 2, lines 65-68). Since Ortolano '221

shows adjacent cover segments, and Ortolano '368 teaches to use a material buildup between adjacent cover segments, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use a material buildup between adjacent Ortolano '221 cover segments as taught by Ortolano '368 for the purpose of integrating the cover portions.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Edgar whose telephone number is (571) 272-4816. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7 am- 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Richard Edgar
Examiner
Art Unit 3745

RE